

**REMARKS/ARGUMENTS**

Claim 9 has been amended to incorporate from the specification the meaning of terms used in the equation. Claims 12, 13, 16, 25, 27, and 28 have been amended to refer to a method for interpolative coding input signals. Claims 12, 13, 15, and 16 have been amended to incorporate from the specification the meaning of some of the terms used in the equation, others being referred to below with respect to the rejection under 35 U.S.C. § 112, second paragraph. Claims 19, 20, 34, and 35 have been amended to refer to the dual (or higher order) predictive coding of vectors as comprising using both REW and SEW predictors; see the specification, page 25, lines 11 – 17. Claim 14 has been amended to correct syntactical and spelling errors, as suggested by the Examiner.

Claim 11 has been made independent, as suggested by the Examiner, incorporating the limitations of Claim 10, from which it depended, and should now be allowable.

Responding to the claim objections in paragraph 1 of the Office Action, the corrections to Claim 14 have been made.

The rejection under 35 U.S.C. § 112, second paragraph, is respectfully traversed. As described above, in some cases the specific meanings of the terms, as obtained from the specification, have been inserted where it does not overly complicate the relevant claim. In other cases, reference has originally been made in the claims to equation numbers that correlate with equation numbers in the specification. Respectfully, this is believed to be a preferred method of designating complex formula terms. It is well settled that in the absence of ambiguity, the definitions in the specification determine the meaning of terms used in the claims. Here, there is no ambiguity, and the reader is led directly to the place in the specification where the terms are used.

The rejection of claims 9, 12 – 16, and 25 – 28 under 35 U.S.C. § 101 for lack of utility is respectfully traversed. In each claim the formulas are now presented in the context of one or more steps in a method for interpolative coding input signals. Please note that Claim 9 depends from

claim 8, which is specifically directed to such a method and, correctly, has not been objected to under 35 U.S.C. § 101. Claims 14 and 26 depend from claims in which the formulas are now presented in the context of one or more steps in a method for interpolative coding input signals. Since they have not been rejected on any other basis, claims 9, 12 – 16, and 25 – 28 should now be allowable.

The rejection of Claims 1 – 8, 10, 17 – 24, and 29 – 35 under 35 U.S.C. § 102 as anticipated by Udaya Bhaskar et al. (U.S. Patent 6,493,664) is respectfully traversed. Claims 1 ((a),(c), (d) and (e), and claims 2 – 7, 21, 29 (a), (c), (d), and (e), 30, and 31, all call for analysis-by-synthesis (AbS). The Examiner contends that the method disclosed by Bhaskar et al. is by definition an AbS method but, respectfully, the reasons given are inadequate to support that proposition. Indeed there is nothing in Bhaskar et al., not in anything quoted from the reference, or anywhere else in the reference that even hints at synthesis that can be used for analysis, or even hints at such analysis. AbS has long been a well established, art recognized term as demonstrated readily by any simple Google search. Its omission from Bhaskar et al.(assigned to Hughes Electronics, a company as sophisticated as any in interpolative speed coding) is evidence itself that Bhaskar et al. has nothing to do with AbS.

Claims 1 (b), 5, 8, 17, 18, 24, 29(b), and 32 call for parametrizing the magnitude of the rapidly evolving waveform. The Examiner contends that the method disclosed by Bhaskar et al. disclose this feature, but the reasons given are merely conclusory. Indeed, while Bhaskar et al. discuss at length a wide variety of parameters, including prototype waveform parameters, spectral frequency parameters, pitch period parameters, linear prediction parameters, voicing measure parameters, parameters that measure the degree of variation of SEW, degree of periodicity parameters, post filter parameters, the only place REW is mentioned anywhere near parameters is when discussing error concealment (column 39, lines 51 – 62), but this has nothing to do with parametrizing the magnitude of the RES.

Claims 1 (f), 10, 29(f), and 33 call for using a coder in which a plurality of bits therein are allocated to the rapidly evolving waveform magnitude. The Examiner contends that the method disclosed by Bhaskar et al. disclose this feature, but the sections of Bhaskar et al. cited by the Examiner do not disclose the feature but point directly away from the feature. Thus, at the cited column 5, lines 17 – 22, Bhaskar et al. make it clear that no bits at all are allocated to the REW magnitude. Bhaskar et al. use a 5-bit vector quantization of the SEW to encode an estimation error, which is used as the REW magnitude, but which is not the REW magnitude. At the cited column 26, lines 7 - 9, Bhaskar et al. merely state the problem, that “since the SEW receives a large share of the bits available to code the residual, only a small number of bits are available to code the REW.” This is not the same as suggesting that bits should actually be allocated to the REW magnitude. Indeed, Bhaskar et al. go on to state that the magnitude-phase form of the REW “is not explicitly coded.” Rather, “the REW phase is derived by a weighted combination of a random phase and SEW phase” (column 26, lines 11 – 14). At the cited column 28, lines 43 - 46, Bhaskar et al. refers only to quantizing an average 5-dimensional shape sib-band vector, not the actual REW magnitude. In contrast, Applicants allocate a plurality of bits to the REW magnitude; see Table 1, page 26 of the specification. Accordingly, rather than suggest this feature, Bhaskar et al. teaches directly away from it.

Claims 19, 20, 34, and 35 have been amended to refer to the dual (or higher order) predictive coding of vectors as comprising using both REW and SEW predictors, a feature not disclosed by Bhaskar et al.

Applicants believe that all the claims are allowable and respectfully solicit a Notice of Allowance.

Authorization is hereby made to charge any additional fees required by this paper or credit any overpayment to deposit account No. 50-0337.

A duplicate of this paper is attached.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Robert Berliner', is written over a horizontal line.

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